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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/626,517 | 07/25/2003 | Masaki Kuzumoto | 402724 | 1108 |

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EXAMINER

CHAUDHRY, SAEED T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1746

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|---|--|
| Office Action Summary | Application No. 10/626,517 | Applicant(s) KUZUMOTO ET AL. 71 | |
| | Examiner Saeed T Chaudhry | Art Unit 1746 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/686,061.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election of Group 1, claims 14 and 16 in the reply filed on November 29, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant's amendments and remarks filed November 29, 2004 have been acknowledged by the examiner and entered. Claims 1-13 and 15 have been canceled and claims 14, 16 and 17 are pending in this application for consideration. Claim 17 has been withdrawn for further consideration, as being drawn to an non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al in view of Sawada and Gray.

Koizumi et al (5,378,317) disclose an apparatus comprising a substrate heating device (20), a wetting device for producing a wet ozone-containing gas (7), a supply device for supplying the wet ozone-containing gas (4), a gas conduit connecting the wetting device to supply device (6) and a wet ozone-containing gas heating device for heating the wet ozone-containing gas. The reference discloses that dewing in the mixed gas supply line can be reduced by heating the pipe forming the steam supply line with a heater (see Figs. 1, 3 and col. 5, lines 26-27). The reference fails to disclose a gas dispenser including a plurality of apertures aligned in a plurality of rows in a width direction of the work object, the apertures in adjacent rows not being aligned with each other in a direction perpendicular to the rows, and at least one of the dispenser and the substrate being movable in a direction perpendicular to the rows.

Sawada et al (JP-5-13398) disclose an apparatus for removing organic material from a substrate surface. Water vapor and ozone mixed gas passes through a vapor pipe (8) and send to a distribution pipe (10) where is sprayed onto the substrate (5) from the multiple spray nozzles (16) installed with the distribution pipe (10) and the substrate is being movable in a direction perpendicular to the distribution (see Fig1 and page 596, lines 6-11). The reference fails to disclose a plurality of apertures aligned in a plurality of rows.

Gray (5,350,480) discloses an apparatus, wherein a gas dispenser include a plurality of apertures aligned in a plurality of rows, the apertures in adjacent rows not being aligned with each other (see Figs. 1-2 and col. 6, lines 3-7).

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It would have been obvious at the time applicant invented the claimed apparatus to incorporate a gas dispenser having a plurality of apertures aligned in plurality of rows as disclosed by Gray into the apparatus of Koizumi et al and Sawada et al for the purpose of uniformly spray ozone-containing gas on the surface of the substrate being treated. Further, the concept of spacing as many apertures in as small area as possible requires the placement of apertures in offset lines as disclosed by Gray. Therefore, one of ordinary skill in the art would have motivated to offset the columns of apertures in attempt to optimize the gas coverage on the substrate. Further, in attempt to change the apparatus from a batch process to a continuous process, one of ordinary skill in the art would utilize the teaching of Sawada et al in the apparatus of Koizumi et al. Since Sawada et al disclose that substrate is movable in a direction perpendicular to the rows of apertures. Furthermore, he references does not specifically teach the particular rows spacing. However, no criticality has been shown for the presently claimed spacing, and optimization of results would have been obvious to one skilled in the art, which would produce uniform and efficient gas flow on the surface of the substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Saeed T. Chaudhry

Patent Examiner

A handwritten signature in black ink, appearing to read "Michael Barr", with a stylized flourish at the end.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER